

G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME: ISOPROPYL ALCOHOL

PRODUCT NUMBER(S): 183900, 183910, 183920, 183930, 183940, 183950, 183970 and 183980

TRADE NAMES/SYNONYMS: Isopropanol; 2-Propanol; IPA, sec-Propyl Alcohol; Propan-2-ol

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Industrial: Use in water treatment chemicals, Use in metal working fluids, Lubricants, Polymer processing, Functional fluid, Chemical for synthesis, Use in coatings, Solvent, Use as a fuel, Use as an intermediate, Rubber Production, Laboratory chemical, Use in cleaning agents, Use in household care products, Manufacture of cosmetic products, Mining chemical.

USES ADVISED AGAINST: No information available.

CAS-NO: 67-63-0

CHEMICAL FAMILY: Alcohol, aliphatic

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: G.J. CHEMICAL CO., INC.

Address: 40 VERONICA AVENUE
SOMERSET, NJ 08873

Telephone: 1-973-589-1450

Fax: 1-973-589-3072

1.4 Emergency Telephone Number

Emergency Phone: 1-800-424-9300 (Chemtrec)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS02

GHS07

Signal word: **DANGER**

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Precautionary statement(s)

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS:

May form explosive peroxides.

3. INGREDIENTS

3.1 SUBSTANCE:

COMPONENT	CAS NO.	% BY WT.	CLASSIFICATION
Isopropyl alcohol EC-No.200-661-7 Index-No.603-117-00-0 Reg.-No. 01-2119457558-25-XXXX	67-63-0	99.5%min.	Flammable liquids (Category 2), H225 Eye irritation (Category 2A), H319 STOT-SE (Category 3), Central nervous system, H336
Water EC-No.231-791-2	7732-18-5	0.2%max.	Not a hazardous substance or mixture
Other organic contaminants			
Not tested for:		0.3%max.	
Non volatile residue		0.001max.	

Note: Assay levels on IPA can reach as high as 99.99%

3.2 MIXTURE: Not applicable

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL): IRRITANT/NARCOTIC.

****FIRST AID- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.**

SKIN CONTACT: ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL): NARCOTIC.

****FIRST AID- Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.**

EYE CONTACT: ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL): IRRITANT.

****FIRST AID- Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.**

INGESTION: ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL): NARCOTIC.

****FIRST AID- In respiratory depression, give oxygen by artificial respiration. Give activated charcoal. Gastric lavage with protected airway is useful even if delayed. Do not attempt emesis if respiration is depressed. Maintain blood pressure. Treatment should be administered by qualified medical personnel (Dreisbach, Handbook of Poisoning, 12th ed.). Get medical attention.**

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:
Inhalation: Exposure to high concentrations has a narcotic effect when inhaled, production symptoms of drowsiness, headache, staggering, unconsciousness and possibly death.

Skin: Contact with skin has a de-fatting action that can cause irritation. May cause irritation with a stinging effect and burning sensation. Contact dermatitis has been reported in a few sensitive individuals. Substance may be dermally absorbed resulting in systemic toxicity as detailed in acute ingestion. Toxic effects may become more marked if absorption and inhalation occur concurrently.

Eyes: Splashes in eyes may cause severe irritation, possible corneal burns and eye damage.

Ingestion: May cause drowsiness, unconsciousness, and death. Gastrointestinal pain, cramps, nausea, vomiting, and diarrhea may also result. Vomiting with aspiration may cause aspiration pneumonia.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Specific details on antidote: No recommendation given.

5. FIRE FIGHTING MEASURES

FLASH POINT: 12°C (53°F) CC UPPER EXPLOSIVE LIMIT: 12.7% (V)
AUTOIGNITION TEMP: 425°C (797°F) LOWER EXPLOSIVE LIMIT: 2.0% (V)
BURN RATE: 2.3mm/min ELECTRICAL HAZARD: CLASS I GROUP D
UNIFORM FIRE CODE: Flammable Liquid IB

5.1 SUITABLE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR ALCOHOL-RESISTANT FOAM; FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL-RESISTANT FOAM ALCOHOL FOAM

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE: FIRE AND EXPLOSION HAZARD: DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK. VAPOR-AIR MIXTURES ARE EXPLOSIVE.

Extremely Flammable; Releases Flammable Vapors below normal ambient temperatures when mixed with air and exposed to an ignition source, vapors can burn in the open or explode if confined. Diluting with water may not suffice to raise Flash Point above ambient temperatures. Keep containers tightly closed. Isolate from all sources of ignition.

CONDITIONS OF FLAMMABILITY: Flammable in the presence of a source of ignition when the temperature is above the flash point.

HAZARDOUS COMBUSTION PRODUCTS: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.

5.3 ADVICE FOR FIREFIGHTERS:

Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Do not enter fire area without structural fire fighter's protective equipment including NIOSH/MSHA approved self-contained breathing apparatus (SCBA) in positive pressure mode. Use water spray to knock down vapors. Use halon, carbon dioxide extinguisher or dry powder for small fires. Large fires are best controlled by alcohol foam, fog, and water spray. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire. Extinguish only if fire can be stopped. Use flooding amounts of water as a fog; solid streams may be ineffective. Cool containers with flooding amounts of water from as far a distance as possible. Avoid breathing vapors; keep upwind. If fire is uncontrollable or containers are exposed to direct flame, water may be ineffective. Fire fighters should wear full protective clothing and NIOSH/MSHA approved self-contained breathing

apparatus (SCBA) with full face-piece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures. Do Not Use: Water in straight hose stream will scatter and spread fire and should not be used.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Extremely Flammable; Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations. Vapors can accumulate in low areas.

6.2 ENVIRONMENTAL PRECAUTIONS:
Keep out of water sources and sewers. Do not flush into surface water or sanitary sewer system

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:
Methods for cleanup and containment:
Use explosion proof equipment. Shut off valves, contain spill, for small spills add non-flammable absorbent in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.
Methods for disposal:
Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations. Dispose of via a licensed waste disposal contractor.

REPORTABLE QUANTITY (RQ): 5000 POUNDS

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: This material presents a fire hazard. Isopropyl Alcohol is a class IB flammable liquid (NFPA). Liquid quickly evaporates and forms vapor (fumes), which can catch fire and burn with

explosive violence. Invisible vapor spreads easily and can be set on fire by many sources, such as pilot lights, welding equipment, and electrical motors and switches. Vapor is heavier than air and can travel considerable distance to a source of ignition and flash back. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:

Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 “Flammable and Combustible Liquids” and National Fire Protection Association (NFPA 77) “Recommended Practice on Static Electricity”.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Recommended storage temperature: 15 - 25°C. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Under proper storage conditions a storage stability of 1 year is expected at ambient temperature. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally. Handle and store under inert gas. Hygroscopic. Storage class (TRGS 510): 3: Flammable liquids

CONTAINER WARNINGS: Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

COMPONENT	CAS NO.	% BY WT.	EXPOSURE LIMITS
Isopropyl alcohol	67-63-0 EC-No.200-661-7 Index-No.603-117-00-0 Reg.-No. 01-2119457558-25-XXXX	99.5%min.	200ppm TLV (ACGIH) 400ppm STEL (ACGIH) 400ppm TWA (OSHA) 500ppm STEL (OSHA) 400ppm TWA (NIOSH) 500ppm STEL (NIOSH)

Note: Assay levels on IPA can reach as high as 99.99%

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES> Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS> Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATOR: The following respirators and maximum use concentrations are recommendations by the U.S. Department of Health and Human Services, NIOSH Pocket Guide to Chemical Hazards; NIOSH criteria documents or by the U.S. Department of Labor, 29 CFR 1910 Subpart Z.

The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

1000 PPM- Any powered, air-purifying respirator with organic vapor cartridge(s).
Any chemical cartridge respirator with a full face-piece and organic vapor cartridge(s).

10,000 PPM-Any supplied-air respirator operated in a continuous flow mode.

12,000 PPM-Any air-purifying, full-face-piece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister.

Any self-contained breathing apparatus with a full face-piece.

Any supplied-air respirator with a full face-piece.

ESCAPE- Any air-purifying, full-face-piece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

HYGIENE METHODS: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

BODYCLOTHING: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SKIN PROTECTION: Employee must wear appropriate protective gloves to prevent contact with this substance.

Full contact Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 60 min

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION: Employee must wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

EMERGENCY EYE WASH: Where there is any possibility that an employee's eyes maybe exposed to this substance, the employer should provide an eye wash fountain within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Isopropyl Alcohol 67-63-0

APPEARANCE:

Watery liquid

COLOR:

Colorless

ODOR:

“Rubbing Alcohol” odor resembling that of a mixture of ethanol and acetone.

ODOR THRESHOLD:

40-45 PPM

pH:

No Data Available

MOLECULAR WEIGHT:	60.10 amu
MELTING POINT:	-89°C (-129°F)
BOILING POINT:	82.4°C (180°F)
SPECIFIC GRAVITY:	0.7855@25°C
DENSITY (25°C):	No data available
VAPOR PRESSURE:	44mm Hg @ 25°C (77°F) 32.4mm Hg @ 20°C (68°F)
VAPOR DENSITY:	2.1
WATER SOLUBILITY:	Complete
PARTITION COEFFICIENT N-OCTANOL/WATER	log Pow: 0.05
FLASH POINT:	12.0°C (53.6°F)
EVAPORATION RATE (BUTYL ACETATE=1):	3.0
UPPER FLAMMABILITY LIMIT:	12.7% (V)
LOWER FLAMMABILITY LIMIT:	2% (V)
AUTO IGNITION TEMPERATURE:	425°C (797°F)
DECOMPOSITION TEMPERATURE:	No data available
VISCOSITY:	2.1cps@25°C
EXPLOSIVE PROPERTIES:	No data available
OXIDIZING PROPERTIES:	No data available

9.2 OTHER INFORMATION:

SURFACE TENSION: 20.8 mN/m at 25.0 °C (77.0 °F)
SOLVENT SOLUBILITY: Soluble in alcohol, ether, chloroform, acetone, benzene; insoluble in salt solutions.

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Stable under normal temperatures and pressures.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: May slowly peroxidize on exposure to air under normal storage conditions. An explosion hazard may exist if the substance is distilled or allowed to evaporate to dryness.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

10.4 CONDITIONS TO AVOID: Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 INCOMPATIBLE MATERIALS: ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL);
ACIDS: Incompatible.

ACIDS ANHYDRIDES: Incompatible.
ALUMINUM: Dissolution is exothermic.
BARIUM PERCHLORATE: Formation of explosive compound.
2-BUTANONE (METHYL ETHYL KETONE): Accelerates the peroxidation of the alcohol.
CHROMIUM TRIOXIDE (GRANULAR): Ignition.
COATINGS: May be attacked.
DIOXYGENYL TETRAFLUOROBORATE: Ignition at ambient temperatures.
HALOGENS: Incompatible.
HYDROGEN + PALLADIUM (PARTICLES): Ignition on exposure to air.
HYDROGEN PEROXIDE: Formation of explosive compound.
KETONES: Markedly increases the possibility of peroxidation.
NITROFORM (TRINITROMETHANE): Dissolves liberating heat and possibly exploding.
OLEUM: Temperature and pressure increase in closed container.
OXIDIZERS (STRONG): Fire and explosion hazard.
OXYGEN (GAS): Autoxidation, on exposure to light, results in formation of ketones and potentially explosive hydrogen peroxide.
PHOSGENE: In the presence of iron salts, may explode.
PLASTICS: May be attacked.
POTASSIUM TERT-BUTOXIDE: Ignition.
RUBBER: May be attacked.
SODIUM DICHROMATE + SULFURIC ACID: Exothermic reaction with possible incandescence.
See also alcohols.

10.5 INCOMPATIBILITIES: ALCOHOLS:

ACETALDEHYDE: Violent condensation reaction.
BARIUM PERCHLORATE: Formation of highly explosive perchloric ester on refluxing.
CHLORINE: Formation of highly explosive alkyl hypochlorites.
DIETHYL ALUMINUM BROMIDE: Spontaneous ignition.
ETHYLENE OXIDE: Possible explosion.
HEXAMETHYLENE DISOCYANATE: Possible explosion in absence of solvent.
HYDROGEN PEROXIDE + SULFURIC ACID: Possible explosion.
HYPOCHLOROUS ACID: Formation of highly explosive alkyl hypochlorites.
ISOCYANATES: Possible explosion in absence of solvent.
LITHIUM ALUMINUM HYDRIDE: Vigorous reaction.
NITROGEN TETROXIDE: Possible explosion.
PERCHLORIC ACID (HOT): Dangerous interaction.
PERMONOSULFURIC ACID: Possible explosion on contact with primary or secondary alcohols.
TRI-ISO-BUTYL ALUMINUM: Violent reaction.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products may include toxic oxides of carbon.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x Eye--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Inhalation: Exposure to high concentrations has a narcotic effect when inhaled, production symptoms of drowsiness, headache, staggering, unconsciousness and possibly death.

Skin: Contact with skin has a de-fatting action that can cause irritation. May cause irritation with a stinging effect and burning sensation. Contact dermatitis has been reported in a few sensitive individuals. Substance may be dermally absorbed resulting in systemic toxicity as detailed in acute ingestion. Toxic effects may become more marked if absorption and inhalation occur concurrently.

Eyes: Splashes in eyes may cause severe irritation, possible corneal burns and eye damage.

Ingestion: May cause drowsiness, unconsciousness, and death. Gastrointestinal pain, cramps, nausea, vomiting, and diarrhea may also result. Vomiting with aspiration may cause aspiration pneumonia.

ACUTE TOXICITY:

IRRITATION DATA: 500 MG skin-rabbit mild; 100 MG/eye-rabbit severe; 10 MG eye-rabbit moderate; 100 MG/24 hours eye-rabbit moderate.

TOXICITY DATA:

Ingredient	Oral LD50 (Rat)	Skin LD50 (Rabbit)	Inhalation LC50	
Isopropyl Alcohol	5045mg/kg	12800mg/kg	16000ppm/8hr	

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Mild skin irritation - 24 h

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Eye irritation 24 h

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No data available.

CARCINOGEN STATUS:

(IARC Group-3). Strong acid manufacturing process: human sufficient evidence (IARC Group-1). Workers involved in the manufacture of isopropyl alcohol by the strong-acid process, involving the formation of isopropyl oils, showed an increase in para-nasal and laryngeal cancer.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No information available.

SPECIFIC TARGET ORGAN TOXICITY (STOT-SE) - single exposure GHS
May cause drowsiness or dizziness.

SPECIFIC TARGET ORGAN TOXICITY (STOT-RE) - repeated exposure GHS
no data available

AT INCREASED RISK FROM EXPOSURE: Persons with pre-existing skin disorders; impaired liver, renal and/or pulmonary function.

11.2 ADDITIONAL DATA: Central nervous system depression, prolonged or repeated exposure can cause: Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects. Aspiration may lead to:, Lung edema, Pneumonia

Potentiates the effects of carbon tetrachloride and other hepatotoxic chlorinated aliphatic hydrocarbons.

RTECS# NT8050000

12. ECOLOGICAL INFORMATION

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS

May be dangerous if it enters water intakes.

Notify local health and wildlife officials.

Notify operators of nearby water intakes.

12.1 AQUATIC TOXICITY (Acute):

Toxicity to fish:

LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h

Toxicity to algae:
EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h
EC50 - Algae - > 1,000.00 mg/l - 24 h

12.2 PERSISTENCE AND DEGRADABILITY: Data not available.

12.3 BIOACCUMULATIVE POTENTIAL:
log Pow <=4 No bioaccumulation is expected

12.4 MOBILITY IN SOIL: No data available.

12.5 RESULTS OF PBT AND vPvB:
PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS> Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Burn concentrate liquids in systems compatible with water-soluble wastes in a permitted facility. Dilute aqueous waste may biodegrade.
CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA Hazardous waste number: D001.
DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)

14.1 USDOT ID Number-----> UN1219

14.2 USDOT Shipping Name-----> Isopropanol

14.3 USDOT Hazard Classification-----> 3 (Flammable Liquid)

USDOT Label Codes-----> 3
14.4 USDOT Package Code-----> II
14.5 Marine Pollutant-----> No
14.6 Special precautions for user-----> Yes
 Emergency Response Guide-----> 129
Special Provisions-----> IB2, T4, TP1
Packaging authorizations:
Exceptions: 173.150; for small quantities of flammable liquids
Non-bulk packaging: 173.202: for liquid hazardous material in packing group II
Bulk-packaging: 173.242: for liquid hazardous material
Quantity Limitations-----> Yes
Passenger aircraft or railcar-----> 5 L
Cargo aircraft only-----> 60 L
Vessel stowage requirements-----> B

Sea Transport (IMDG)

14.1 ID Number-----> UN1219
14.2 Proper shipping name-----> ISOPROPANOL
14.3 Hazard Classification-----> 3 (Flammable Liquid)
 Label Codes-----> 3
14.4 Package Code-----> II
14.5 Marine Pollutant-----> No
14.6 Special precautions for user-----> Yes
 EMS-Number-----> F-E, S-D

Air Transport (IATA)

14.1 ID Number-----> UN1219
14.2 Proper shipping name-----> Isopropanol
14.3 Hazard Classification-----> 3 (Flammable Liquid)
 Label Codes-----> 3
14.4 Package Code-----> II
14.5 Environmental hazard-----> No
14.6 Special precautions for user-----> Yes
 Quantity Limitations:
 Passenger and Cargo Aircraft-----> 5L
 Cargo Aircraft Only-----> 60L
 Passenger Aircraft-----> 1L

US DOT DESCRIPTION: ISOPROPYL ALCOHOL, 3, UN1219, GROUP II

15. REGULATORY INFORMATION

**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION
SPECIFIC FOR THE SUBSTANCE OR MIXTURE:**

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed as a toxic chemical

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard, and Fire Hazard.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed

Reportable Quantity - 5,000 pounds.

SECTION 101(14) Reportable Quantity: 5,000 lbs

RCRA (Resource Conservation and Recovery Act.)

40 CFR 261.33 Hazardous Waste Number: D001

Massachusetts Right to Know Components

2-Propanol CAS-No.67-63-0

Pennsylvania Right to Know Components

2-Propanol CAS-No.67-63-0

New Jersey Right to Know Components

2-Propanol CAS-No.67-63-0

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

TSCA (Toxic Substance Control Act)

2-Propanol CAS 67-63-0 is listed on the TSCA Inventory.

International Inventories:

<u>Country or Region</u>	<u>Inventory Name</u>	<u>On inventory yes/no</u>
<u>Australia</u>	Australian Inventory of Chemical Substances (AICS)	Yes
<u>Canada</u>	Domestic Substances List (DSL)	Yes
<u>Canada</u>	Non-Domestic Substances List (NDSL)	No
<u>China</u>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<u>Europe</u>	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
<u>Europe</u>	European List of Notified Chemical Substances (ELINCS)	No
<u>Japan</u>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<u>Japan</u>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<u>Korea</u>	Existing Chemicals List (ECL)	Yes

<u>Mexico</u>	National Inventory of Chemical Substances (INSQ)	Yes
<u>New Zealand</u>	New Zealand Inventory	Yes
<u>Philippines</u>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<u>Switzerland</u>	Inventory of Notified New Substances (CHINV)	Yes
<u>Taiwan</u>	National Existing Chemical Inventory (NECI)	Yes
<u>United States & Puerto Rico</u>	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has been carried out for this substance.

16. OTHER INFORMATION:

Hazard Rating:

4-Extreme

3-High

2-Moderate

1-Slight

0-Insignificant

NFPA RATINGS (SCALE 0-4):

Health=2

Fire=3

Reactivity=0

HMIS RATINGS (SCALE 0-4)

Health=2

Fire=3

Reactivity=0 PPE=G

Hazard statement(s) from Section 2 and 3:

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Date of Preparation: JULY 27, 2000

Revision Number: 3.0

Revision Content: Update Sections: 7, 11, and 16.

Revision Date: April 16, 2019

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygienists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American National Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health

NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System

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